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III.—ANALOGY IN THE SEMITIC LANGUAGES.

I.

The received opinion on the nature of analogy as a linguistic phenomenon, and on the relation of analogy and phonetic law may be stated as follows:¹

1. The phonetic laws are absolutely without exception. There are not two classes of sound-changes, regular and irregular, systematic and sporadic.²

In speaking of phonetic law, however, it must be remembered that the idea of law is conditioned by the sphere in which it works and the material to which it is applied. We cannot speak of phonetic law in the same sense in which we speak of a natural law in physics or in chemistry. The student of linguistic phenomena should always take into account the individuality of the language-user.

2. Whatever cannot be explained by regular processes of phonetic law must, in the main, be due to the influence of analogy. Most, if not all, apparently irregular and exceptional forms which cannot be brought under any known phonetic law, or which seem to violate such laws, have been formed directly after the model of other forms without etymological consciousness, simply by the power of association.

These two forces, viz. phonetic variation and formation by analogy, are regarded as the most potent in bringing about individual instances of linguistic changes. Thus Sievers, in his article on Philology in the ninth edition of the *Encyclopaedia Britannica*, speaking of these two forces, says: "They generally work in turns and often in opposition to each other, the former frequently tending to the differentiation of earlier unities, and the latter to the abolition of earlier differences, especially to the restoration of conformity disturbed by phonetic change. Phonetic change affects exclusively the pronunciation of a language by substitut-

¹ See Misteli, *Lautgesetz und Analogie*, in Lazarus' und Steinthal's *Zeitschrift für Völkerpsychologie und Sprachwissenschaft*, XI 365-475.

² Cf., however, BAL 98 2, A. J. P., V 171.

ing one sound or sound-group for another. Analogical change is confined to the formation and inflection of single words or groups of words, and often has the appearance of being arbitrary and irregular. It is beyond our power to ascertain whence analogical changes may start, and to what extent they may be carried through when once begun. All we can do is carefully to classify the single cases that come under our observation, and in this way to investigate where such changes are especially apt to take place, and what is their general direction."

Starting with these general premises, it is the purpose of this article to study the operation of analogy in the Semitic languages, and to present, in a systematic way, the results of this study. In a study of this kind we are confronted by three questions :

1. What is the relation of analogy to the characteristics and structure of the languages in which it occurs? Are its nature, its manifestations, and the scope of its application at all modified or conditioned by the well-known peculiarities of these languages?

2. What individual instances of analogical formations are found in these languages?

3. How are they to be classified?

In conducting our investigations we may start from the well-known fact that the whole structure of language, in its grammatical forms and categories, is, in a sense, analogical. It exhibits the operation of what we may call *constructive analogy*.

The working of analogy as a constructive force in building up groups of similar words and forms may be stated as follows: It is obvious that different stems, forming different words and presenting different sounds and combinations of sounds, are used to express different ideas; and further, that different modifications of the same stem, whether by internal vowel changes, or by the addition of prefixes, infixes and suffixes, express the same idea under different modifications and relations. But that different words should undergo the same changes and receive the same additions in the form of prefixes or suffixes in order to express the same relation or modification of the original idea, is clearly the result of analogy whereby words are grouped together in classes, and within these groups the change which is applied to one is applied to all. This formation of groups or classes of words and inflectional forms, and the application of the same inflectional change (using this term in its widest sense) to every word belonging to the same group, are the result of analogy. Each group is governed by a prevailing

analogy, and each individual of the group is treated in its developments and its modifications to express different relations, in accordance with this prevailing analogy. The Semitic languages are peculiar in exhibiting with great clearness and fullness the effects of this constructive analogy by the regularity and uniformity of their structure. So, for example, in the inflection of the verb we find that the general analogy which is normally exhibited in the stems with strong and firm consonants holds good for all verbs, and the deviations from this model of the strong or regular verb are only modifications owing to the peculiar nature and feebleness of certain consonants. From the simple form of the primitives, called the *Qal* or first form, are formed according to an unvarying analogy in all verbs the verbal derivatives, sometimes called forms, or stems, or conjugations, each distinguished by a specific change or added element, with a corresponding definite change in its signification, such as intensive, causative, etc. In other languages where such formations exist they are usually regarded as new derivative verbs. But in the Semitic languages they are incomparably more regular than in the Indo-European languages.¹

In these cases we have no reason to suppose that the present uniformity had to contend with original diversity. It may have been so, but the presumption is that it was not so. But the case is different when we consider another marked uniformity in the structure of these languages, viz. the fact that all inflectional stems have, or are assumed to have, three stem-consonants. As the languages have come down to us, we find a striking uniformity of appearance, but we have reason to suspect that it is at the expense of original divergency. In this case we have an instance of analogy partly as a disturbing and partly as a constructive influence. There are indications that the number of tri-consonantal stems was originally much smaller than at present, but in the course of linguistic development bi-consonantal stems were made tri-consonantal by the addition of another consonant until finally the latter formed the majority.² And although we have reason to suppose that the inflection of bi-consonantal stems was originally to some extent peculiar and different from the inflection

¹ See Kautzsch-Gesenius, *Hebrew Grammar*, 25th ed., Leipzig, 1889, §§39, 2 and 41.

² Cf. Lagarde, *Symmicta*, I 122 (Göttingen, 1877); *Deutsche Schriften* (1886), 285; *Bildung der Nomina* (1889), 215.

of tri-consonantal stems, yet the preponderance of tri-consonantal stems was so strong that even those bi-consonantal stems which remained for the most part gave up their individuality, in various ways assuming the appearance of tri-consonantal stems and conforming to their method of inflection.¹

It may be assumed, then, as an established fact that the present uniformity in the appearance of the languages, namely, the predominance of tri-consonantal stems, is at the expense of original diversity. Still, even here, after the uniformity had once been established, analogy works as a constructive force in the further inflection of these stems.

But leaving for the present the consideration of analogy and the analogical structure of the Semitic languages in this sense of the term, let us examine the subject of analogy in its narrower, more specific sense, in the sense in which the word is generally used by recent writers, such as Misteli and Sievers; let us see what instances of such analogical formations we have in these languages, how they may be most conveniently classified, and how they are related to the fundamental structure and characteristics of these languages.

Whatever theory we may adopt as to the original form and constitution of the (so-called) weak verbs, this much at the least is certain, that in their present form they present the appearance of verbs regularly inflected after the model of the strong or perfect verb, modified, however, by the peculiarities of the weak consonants found in the stem. Add to this the fact that in some of the Semitic languages certain consonants (e. g. in Hebrew the gutturals) have certain peculiarities which give rise to corresponding peculiarities of inflection of the stems containing such consonants, and all the apparent irregularities of Semitic verb-inflection are accounted for. These different peculiarities give rise to different classes of verb-inflection, according to the ordinary denomination, verbs פ', כ', ג', etc.

But knowing something of the nature of these weak consonants, something of the nature of the differences which distinguish these different classes of stems in their various formations and inflections on the one hand, and something of the nature of analogy as it is commonly understood, and as it is exhibited in

¹ Compare Whitney, *Language and the Study of Language*, p. 302 sq.; Stade, *Lehrbuch der Hebräischen Grammatik*, §12a, 1 and §142-144; Kautzsch, *Grammatik des Biblisch-Aramäischen*, §§45 and 46; Nöldeke, *Syrische Grammatik*, §§41 and 57.

other families of languages on the other hand, we are led to expect the occurrence of analogy just here. We are led to expect that the peculiarities which distinguish one class of weak verbs from another, the barriers, as we may call them, which separate the different classes from each other, should be entirely or partially disregarded and the different forms confused. And such we find to be the case. We have not only the general fact that all the inflection of those weak verbs which were originally bi-consonantal in their stems is analogical, i. e. based on the analogy of the stems with three stem-consonants, but we have also a great many specific cases of analogy. We find many individual instances of verbs of one class treated as if belonging to another class, and hence inflected after the analogy of that class, or even disregarding the weakness or peculiarity entirely and inflected directly after the analogy of the strong verb. We find also a few instances where the strong verb is inflected after the analogy of the weak. All such cases of analogical formation, therefore, which affect the real or assumed stem of any word comprise one class with three subdivisions.

CLASS I.

Analogical formations in the inflection of the verb or in the formation of verbal derivatives with reference to the different classes of stems.

Under this head we have three subdivisions :

- A. Confusion of the different classes of weak stems.
- B. Weak stems after the analogy of the strong.
- C. Strong stems after the analogy of the weak.

This law of *tri-consonantality*, if we may so call it, in the stems of words, is one of the most prominent characteristics of the Semitic languages, and this class of analogical formations which has just been considered is closely connected with this same characteristic, in that stems which in their original form did not have three stem-consonants are conformed to the analogy of regular, original, tri-consonantal stems.

Another peculiarity of the Semitic languages is the function of the vowel and the use made of differences and changes in vocalization to differentiate various classes of words and to construct different inflectional forms. Thus, in Arabic, *qatala* is the type of the active transitive verb, *qatila* of the intransitive, and *qutila* of the passive.¹

¹ Cf. Lagarde, *Bildung der Nomina*, p. 7 (ZDMG XLIV 536).

We have also many phonetic processes whereby vowels are changed, lengthened, shortened, etc., in the various processes of inflection. These changes and variations are so light and delicate that we may expect some confusion at times, and such we find to be the case. Sometimes these phonetic processes are firmly maintained, enabling us to ascertain the law which governs them. But in a great many cases forms are transferred from one class to another, and changes take place which are not warranted by any phonetic law. All these analogical formations connected with the vocalization of the different words and forms can be comprised in one class. This gives us

CLASS II.

Analogical formations involving changes and confusion in vocalization.

Still another peculiarity of the Semitic languages is their method of inflection and of the formation of derivative words by preformatives, informatives, and affirmatives, and the resulting distinction between servile and stem-consonant. These formations and distinctions are peculiarly subject to confusion, and hence give rise to many analogical formations which may be comprised in one class with four divisions.

CLASS III.

Analogical changes in the formative elements of words.

- A. Mistaking servile or formative element for part of the stem.
- B. Mistaking a stem-consonant for a servile.
- C. Analogical changes in the formative elements themselves; influence of one formative element upon another.
- D. Addition of serviles and formative elements where they do not belong.

I have thus shown, in a preliminary and provisional way, the possibility of the existence of three different classes of analogical formations affecting respectively the stem-consonants, the vowels, and the formative elements of the different words and forms. But when we consider that every Semitic word can be analyzed into these three elements, viz. its consonantal stem, its vowels, and its formatives, and that these three elements are in the main so strongly marked and so clearly separated, we see at once that this analysis has furnished us a basis for the classification of analogical formations which, though perhaps not so profoundly philosophical as some other modes of classification which might be

adopted, still has the merit that it is simple, practically convenient, and exhaustive, and most of all, that it presents these analogical phenomena in closest connection with the structure and the characteristics of these languages.

The results of our study up to this point may be summed up in the following propositions:

1. The whole structure of the Semitic languages and all the formations and inflections of words are analogical, using the term analogy in its widest sense.

2. Using the term analogy in its restricted and more usual sense when speaking of it as a linguistic phenomenon, those cases of analogical formation which do occur are connected most closely with the structure and various characteristics of these languages, and *thus they are easily accounted for, in fact they occur just where this structure and these characteristics lead us to expect them.*

We find, then, these two factors in the structure of the Semitic languages: on the one hand a notable degree of regularity in the recurrence of certain fixed types of forms and in the application of inflectional modifications; on the other hand, certain deviations from these types and normal processes under the influence of a disturbing analogy. But when we look more closely into the nature and relations of these two factors it becomes evident at once that they sustain a most intimate relation to each other. They are not the result of separate and distinct linguistic forces, or to go back of the language to the mind of the language-user, of separate and distinct faculties of the mind. They are the result of the same law working under different conditions. As a linguistic law we call it *the law of the group*. As the product of the human mind we ascribe it to *the power of association*. By the constitution of the human mind each word is felt to be a member of a distinct class or group, and not simply an isolated individual; and the whole philosophy of analogy as a linguistic phenomenon may be thus briefly expressed:

Whenever the law or type of any group has been able to maintain itself, the individual conforms to the law of the group to which it belongs and the formations are normal.

But when the law breaks down and the distinction between the groups is disregarded, the individual, instead of conforming to the group to which it belongs, is transferred to another group, with which somehow it has become associated, and the result is a disturbing analogy.

It is true that the unwarranted application or extension of analogy beyond its legitimate bounds is a marked feature of language. It is this that has given rise to the expression *mistaken* or *false* analogy. It might better be called disturbing analogy. One of its most frequent effects, as is pointed out in the words of Sievers, quoted above, is the obliteration of existing differences. But it is wrong to regard analogy simply as a disturbing influence. In fact, we might almost say that this is only an incidental effect. It is better to regard analogy as that which binds together the different individual members of each group of words or linguistic elements. Or to speak more accurately, it is natural for the mind to associate words which although different still are felt to be members of one and the same group, and to apply to all the inflectional changes which it has been taught to apply to one. This extension of the same inflectional changes to all the different members of the same group, this formation of different words from different stems after the same type or model, is not the work of memory, as is also pointed out by Brugmann in his book "*Zum heutigen Stand der Sprachwissenschaft*," p. 79. It is the work of the power of association or combination, or, as it might also be called, the analogical faculty. We are not concerned primarily with the name of this faculty, however. But that with which we are concerned is the fact that so-called analogical formations are not to be regarded as something isolated and entirely distinct from those formations which are called normal, but rather they are the results of the same mental process, and show the operation of the same law working under different conditions.

Starting from the principle that analogy is the modification of an existing form, or the origination of a new form after the model of another form with which it is associated, different schemes for the classification of such analogical phenomena have been proposed. These different schemes are presented and reviewed by Delbrück, "*Einleitung in das Sprachstudium*," p. 108 fg. According to him these classifications are made from three different points of view:

1. According to the nature of the psychological activities which are concerned in the different formations.
2. According to the nature of the words affected by analogy.
3. According to the results of the operation of this force of analogy.

The first of these principles is the one adopted by Misteli in

the article already referred to (*Zeitschrift für Völkerpsychologie und Sprachwissenschaft*, XI 365-475, XII 1-26), and after him by Wheeler, in his treatise on "Analogy and the scope of its application in language."¹ As this is by far the most satisfactory of existing methods of classification, I shall present it in some detail, using mainly the phraseology of Wheeler in the statement of the different classes, and illustrating them by examples taken from the domain of Semitic.

According to Sievers, the influence of analogy tends largely to the abolition of earlier differences. Similarly Wheeler (op. cit. p. 35): "The operation of analogy in language is in every case ultimately conditioned and determined by the natural quest of the mind for unity to replace multiplicity, system to replace anomalous diversity, and groups to replace monads. The office of the psychical factor in the development of language is therefore the maintenance and re-establishment of the groups which the phonetic laws tend to disrupt, and the creation of new groups. It aims to eliminate purposeless variety."

To this must be added the important statement on page 37 of the same work: "The formation of new groups very commonly appears as a readjustment of old groups. Changes in the character and use of the phonetic material of a language often cause a form or number of forms to be severed from one group and attached to another."

Wheeler thus classifies the phenomena of analogy:

I. *Likeness of Signification and Diversity of Form.* Two words entirely diverse in form, but which are capable of application to one and the same object or idea, may, through the influence of this limited likeness of signification, be confused into one word by the process known as "contamination of form."

No instance of this kind in Semitic has occurred to me.

II. *Affinity of Signification and Diversity of Form.* Words totally dissimilar in form, but expressing ideas of like category, are made to approximate slightly in form through the extended application of some sign of category or through the extended use of some element or combination of elements of sound which has come to be recognized as characteristic of a group.

As an illustration of this kind of analogy the following has occurred to me: The common people often say *masoner* for *mason*. The ending *er* came to be regarded as expressing trade or calling,

¹ Ithaca, N. Y., 1887. Cf. also A. J. P. V 165-85, X 202.

from such words as *painter, joiner, carpenter, farmer*, etc. Hence they sought to bring *mason* into the same category of form by adding *er* and making *masoner*.

Instances in Semitic are the following among others: The prefix *m*, to form the passive participle of the Arabic first form, of which the ground-form is *qātūl*. See Barth, *Nominalbildung*, p. 178, §123a.¹

In Arabic this principle often works in the extension of existing groups. See Barth, *Nominalbildung*, p. 135, §85d. The form *qatīl*, formed nominally from the *i*-imperfect, is used to denote masses, collectives. Then in that sense it is formed from stems which have no *i*-imperfect, especially to denote masses or collections of animals, *kalīb* 'dogs,' *ḡa'in* 'sheep,' etc.

Cf. also the Mandaean pronouns *ächnun*, *ächtun*, *ächtöchun* and *ächnöchun* (Nöld., *Mand. Gramm.*, p. 86).

III. *Likeness of Function and Diversity of Form.* Words differing in *form* are reduced to groups upon the basis of likeness of function, i. e. of likeness of use in the economy of the sentence and for the expression of like modifications of thought.

An illustration of this kind of analogy is found in the formation of the Hebrew infinitive absolute of the Niphal. See Barth, *op. cit.* p. 72, §49b. The regular infinitive absolute of the Niphal is seen in נִכְסֵךְ. But as in the Piel and Hiphil a certain assonance was perceived between the imperfect and the infinitive absolute used to strengthen it, e. g. שָׁבַר הִשְׁבַּר, Ex. 23, 24, a similar form was originated in order to produce a similar assonance in the case of the Niphal הִכְרַת הַכְרַת אֲמֵלֶט, I Sam. 27, 1, etc. This analogical formation almost entirely displaced the organic.

Other illustrations of this are seen in the formation of prepositions with suffixes in Hebrew and in Ethiopic. Compare אֶלֶיךָ, יְתִרְתִּיךָ, אֲחֶרֶיךָ, עֲדֶיךָ.

The ' is organic in the first two cases, because they are to be referred to the stems אֵלִי and עִרִי. Starting from such stems it is extended analogically to stems of other prepositions where it has no place at all.

IV. *Contrast of Signification and Partial Likeness of Form.* Words of contrasted signification and of partly similar form are grouped in couplets, and a further approximation in the outward form is the result.

¹ Cf., however, *Beitr. z. Assyriologie* I 160 (ZA, IV 375).

² Cf. ZDMG, XLII part 3 (A. J. P. X 234) and Lagarde, *Mittheil.* II 231.

An instance of this kind of analogy is given by Praetorius, Ethiopic Grammar, p. 86, §99. Eth. *waq'a*, *he has gone out*, has in the subjunctive *iqā'*, and imperative *qā'*. These forms ought to be inflected thus: *teqē'i*, *iqē'ā* or *qē'i*, *qē'ā*. They follow, however, the analogy of their opposite *ibā'*, from *bō'a*, *he has gone in*, and hence we have the forms *teqā'i*, *iqā'ā*, *iqā'ā*, etc.¹

Another illustration of the analogy of the opposites is the Hebrew קָצַץ, *last* (stem קָצַץ) after the analogy of ראשון, *first*.

V. *Likeness of Signification and Partial Likeness of Form.* Words whose stems have a like signification and are similar but not like in form are grouped together upon the basis both of meaning and form, and a levelling of the form of the stems is the result.

Under this head Wheeler brings the following classes of analogical formations:

A. Levelling between different cases of like stems.

As an instance, somewhat similar at least to the instances mentioned by Wheeler under this head, may be mentioned such cases as I have given under Cl. III, Div. B., the Assyrian plural *ilāti* for *idāti*, from *ittu*, which stands for *idtu*,² the feminine of *idu*, *hand*.

B. Levelling between the different forms for person and number in the same tense of the verb.

Analogical influence of this kind is very conspicuous in the inflection of the perfect of the Semitic verb.

The original paradigm probably was as follows, in the singular :³

- qatal a. 'he has killed.'
- qatal at. 'she has killed.'
- qatal tā. 'thou hast killed.'
- qatal tī. 'thou (fem.) hast killed.'
- qatal kū. 'I have killed.'

In Ethiopic, the first person *qatal-kū* has influenced the second person masculine and feminine, so that they now have *qatalkū*, *qatalkī*. In the other languages the reverse of this process took place; *kū* of the first person was changed to *tū* under the influence of the analogy of the second person, while in Hebrew, by a further analogical change, *tū* was changed to *tī* under the influence of the possessive suffix *i*.⁴

¹ Cf. Hebraica II 6, i.

² See Hebraica I 178, 5; cf., however, Delitzsch, Prolegomena 46 and 115.

³ See Nöldeke, Die Endungen des Perfects, ZDMG, XXXVIII 407 sq.

⁴ Cf. SFG 53 below; ZDMG, XXXVIII 419; XLIV 539, 1; Wright, Comp. Gramm. 175.

C. Levelling between the different parts (tenses), etc., of the same verb.

An instance of this kind of analogical formation is seen in the vocalization of the Hebrew perfect and imperfect *Piel* as compared with the corresponding forms in Arabic. In Arabic, which probably comes nearest to the primitive, we have *qattala*, *yugattilu*, while in Hebrew we have קָטַל, יִקְטֹל. The *e*-vowel of the second syllable of the perfect is probably due to the influence of the corresponding vowel of the imperfect. The *i*-vowel of the first syllable is then perhaps due to vowel-harmony.

D. Levelling between derivative and primitive.

No instances of this kind in Semitic have occurred to me, perhaps because there generally exists such a close connection between derivative and primitive.

For this classification Wheeler claims practical exhaustiveness. He says: "Under the five main categories which have been thus far established and discussed may be classified nearly if not quite all the phenomena usually associated with the action of analogy."

I have preferred, however, in my treatment of analogy to look at the phenomena from a different point of view, and adopt a different method of classification. The predominant characteristic of all Semitic analogical formations, as I have already shown, is *the formation of groups, and the disturbance of these groups* by transferring individual words, forms, portions, or characteristic elements of forms from one group to another, taking them from a group where they exist organically and applying them to or placing them in a group where they do not belong. These disturbances or transferments will naturally affect either the consonantal ground-stem of a word, or the vocalization of the stem, or those formative elements, prefixes, infixes, suffixes, by which different inflectional forms or derivative words are formed. Hence the classification which I have given will logically follow, and I trust that a study of the material as I have arranged it, in the second part, under these different heads, will bear out its suitability. This material will appear in a subsequent number of this Journal.

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